

ABSTRACT

The present invention relates to power management within the context of wireless ad-hoc networks. More specifically to the effects of using different transmit powers on the average power consumption and end-to-end network throughput in a wireless ad-hoc environment. This power management approach reduces the system power consumption and thereby prolongs the battery life of mobile nodes. Furthermore, the invention improves the end-to-end network throughput as compared to other ad-hoc networks in which all mobile nodes use the same transmit power. The improvement is due to the achievement of a tradeoff between minimizing interference ranges, reduction in the average number of hops to reach a destination, reducing the probability of having isolated clusters, and reducing the average number of transmissions including retransmissions due to collisions. The present invention provides a network with enhanced end-to-end throughput performance, and lower transmit power.